ligaments, and articular cartilage. Fresh evidence is now reopening this argument.

The initial advantages of partial meniscectomy over total have been confirmed repeatedly. In one prospective trial[8] the early morbidity was "much less." A more detailed retrospective review[9] found that partial meniscectomy was followed by less pain and more rapid recovery of quadriceps power, so allowing the patient to be discharged from hospital on average one day earlier. Subsequent recovery of joint function to the stage when unprotected use of the leg could be permitted was substantially quicker, with a gain of five days. These short-term advantages would be insufficient justification for partial meniscectomy if the more remote results were poor, but this is not the case. Entirely satisfactory results were reported in one series in 40 of 46 partial meniscectomies.[10] Another ten-year review found that 80% of patients had no serious symptoms.[11] A review of 78 partial and 125 total meniscectomies 10 to 30 years later gave a slight advantage in good and excellent results to the smaller operation.[12] The best results of all succeeded simple removal of a bucket handle fragment. Three other careful reviews have shown a clear long-term advantage to the lesser operation. In one,[9] all 20 patients after partial meniscectomy were enthusiastic about the result, compared with 30 of 48 who had had the whole meniscus removed. In another group[13] effusion was four times and loss of motion twice as common after total meniscectomy. In both these series the bigger operation was followed more frequently by late radiographic evidence of joint deterioration. In a prospective survey[8] of 107 total and 33 partial meniscectomies 31 of the latter had no symptoms compared with only 66 in the total meniscectomy group.

Experience has not, therefore, born out the fear that recurrent symptoms might be more frequent after partial meniscectomy. In fact, there is both clinical and radiological evidence of less late deterioration in the knee when it has been possible to restrict the operation to removal of the loose fragment only. So we can no longer justify an uncritical policy of total meniscectomy. The whole cartilage must be removed for multiple splits or for a peripheral tear, but for a bucket handle tear or a tear of the free margin the loose fragment alone should be excised. The surgeon must then make sure that he has overlooked no further lesion. Preliminary arthroscopy should help here,[14–16] and, if the stimulating paper by Dandy in this issue (p 1099) is any guide, arthroscopy also offers a prospect of making partial meniscectomy even swifter and neater.

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Diuretics in the elderly

Elderly patients receive a disproportionate number of drugs on prescription, and diuretics are one of the most common classes of drug given to them.[1–5] The object of diuretic treatment is usually the relief of symptoms of hypertension or heart failure, but diagnosis of these conditions may be made from slender evidence so that the use of diuretics is often inappropriate and potentially harmful. Ankle oedema is a misleading sign: only occasionally is it associated with heart failure, and most often it is due to muscular inactivity combined with incompetent leg veins.[6] In a recent study from Cardiff diuretics were stopped in 54 long-stay patients: only eight needed to go back on them.[7] The treatment of hypertension in the elderly is also controversial, and whether it produces a worthwhile extension of useful life is not clear. Amery *et al*[8] have shown recently that diuretics (with or without methyldopa) can lower elderly patients' blood pressure without major clinical or biochemical disturbances. Catastrophic hypotension, however, may occur with over-enthusiastic treatment,[9] and hypotensive drugs should probably not be given unless a patient has a blood pressure of more than 200/110 mm Hg lying down with no postural fall on three or more occasions.[10]

The unwanted effects of diuretics in the elderly stem from their known pharmacological actions; they differ from those in younger adults only in their incidence and severity. For example, a brisk diuresis—particularly from potent "loop" diuretics such as frusemide and bumetanide—often leads to urinary incontinence, acute retention, or interference with social activities such as shopping and travelling. Thiazide diuretics may also cause these problems, but with their smooth and less potent action they are preferred by many patients—and considerably cheaper.

All diuretics except amiloride, spironolactone, and triamterene increase potassium loss, at least initially.[11] Though the importance of hypokalaemia remains debatable potassium loss is likely to be more serious in elderly patients, since many are also taking digoxin and have diets low in potassium.[12] Hypokalaemia should be suspected in patients on diuretics who have muscle weakness, tiredness, depression, or confusion. More serious effects of hypokalaemia, such as paralytic ileus, renal tubular damage, and cardiac arrhythmias, are unusual unless there is another cause of potassium loss such as vomiting, fistulas, or diarrhoea. Potassium supplements are often recommended for older patients, but many find the effervescent formulations unpalatable and have difficulty in swallowing Slow-K—which sometimes, moreover, causes ulceration of the small intestine with haemorrhage, perforation, or stenosis.[13] Thus the supplements that are prescribed are frequently not taken.[14] The alternative is to use a combination of a potassium-conserving diuretic with either a thiazide or a loop type. This will result in a more effective diuresis, but the combination may lead to hyperkalaemia if the patient has diminished renal function (creatinine clearance less than 10 ml per minute) or is also taking potassium supplements.

Diuretic treatment may also precipitate overt diabetes mellitus.[11] The risk rises as age[15] and weight increase or if the patient has already shown evidence of latent diabetes. Fortunately, the condition can be detected promptly if there is regular urine analysis and can usually be controlled by diet or a sulphonylurea drug (but not chlorpropamide). The remaining side effect is uric acid retention, which leads only rarely to secondary gout.[11] Allopurinol should be used only if raised serum uric acid concentrations are associated with more than one attack of acute gout.

Diuretics have revolutionised the management of patients with heart failure, and they are one of the most useful treatments for hypertension. They should be used, however, only where there is a good clinical indication and adequate facilities exist for clinical and biochemical follow-up. Potassium supplements or a potassium-conserving diuretic should be given to all patients receiving digitalis and diuretics concurrently, and the combination can probably be justified in most other elderly patients on diuretics.

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Stab wounds of the spinal cord

Outside South Africa, stab wounds of the spinal cord are uncommon. In California,[1] for example, there were only 19 cases in over 50 000 admissions with traumatic injuries over 33 years, and in over 4000 patients with injury to the spinal cord seen at Stoke Mandeville Hospital, England, over 27 years only four had a stab wound.[2] In contrast, in a recent 12-month period 4280 patients with stab wounds were treated in the Groote Schuur Hospital in Cape Town, and 12 of these had spinal cord damage, while in the Spinal Cord Injury Centre in that city 450 of the 1600 patients admitted in 13 years had sustained a stab wound of the spinal cord.[3] The reasons for stabbing included robbery, gang warfare, and jealousy. The weapon was usually a knife, but might be an axe, a screwdriver, or a sharpened bicycle spoke; and 65% of victims had a single wound.

In this type of injury the assailant usually attacks his victim from behind,[4] striking the upper dorsal region. The anatomy of the vertebral column is such that the blade tends to enter the gutter formed by the spinous process in the midline and the transverse processes laterally, often being deviated laterally by the dorsal projection of the transverse processes.[3] A contrecoup spinal cord lesion may occur.[5] Sometimes fragments of a lamina are driven into the spinal canal, and a thin weapon may enter an intervertebral foramen.[6] There are parallels with what may occur in the estocada in bull-fighting, when the matador uses a sword (estoque) to kill the bull by a thrust between the scapulae to reach the heart and aorta; if he is unsuccessful a coup de grace is required, delivered by piercing the spinomedullary region through the occipitoatlanto interval with a dagger.

Distinct clinical neurological patterns result from stab injuries to the cord. Between 70% and 80% of patients have an incomplete lesion[3]—usually some form of Brown-Séquard syndrome,[7–10] as was shown in 69% of those with partial lesions in the largest reported series.[3] Other authors confirm this frequency.[1 4 11–17] The syndrome usually consists of ipsilateral motor and proprioceptive loss and marked hyperaesthesia to pin prick, with contralateral loss of pain and temperature sensation.

Neurological damage from stab wounds of the spine may be delayed,[11 14 17–19] the interval varying from two to as long as 36 years. In all such cases reported a broken piece of knife blade had been left in situ in the spinal canal. Sometimes no radiograph had been taken initially, or the picture was not good enough to show the piece of knife blade; sometimes no action had been taken to operate and remove the portion of knife. In such cases the patient may give a history of a second relatively minor head or closed spinal injury which appeared to trigger off spinal neurological abnormalities. Other, rarer causes of delayed or of increasing neurological signs are spinal abscess (epidural, subdural, or intramedullary); granulomatous tissue formation; or iron encrustation around a retained portion of the knife.

Myelography is indicated only if there has been progressive neurological deterioration, most often in the early stages after injury due to an abscess. Lumbar puncture is of no diagnostic or prognostic value and is required only if meningitis is suspected. In most patients who have had a stab injury of the spine there is no call for major surgery,[3 5] though many patients have associated injuries which may require special treatment.[20] The local wound needs excision and careful closure in layers, and prophylactic antibiotics and antitetanus treatment should be given.[21] Patients with anything more than minor neurological abnormalities should be admitted as soon as possible to a specialist spinal unit. Bed rest is not necessary (from the neurological point of view) since the spine is usually stable. Laminectomy will be needed only if there is a retained portion of the weapon; if indriven fragments of bone are compressing the spinal neural elements (for such fragments must be removed under direct vision[3]); or if a cerebrospinal fluid leak persists for more than three or four days.[3 5] Appropriate treatment may also be needed for a spinal abscess; even intramedullary lesions may have an excellent prognosis.[22] Any removal of intramedullary extension of granulation tissue may aggravate neurological symptoms and signs,[11 14 17] and this must be done with extreme care, preferably under a dissecting microscope and with the aid of bipolar coagulation diathermy.

Stab wounds affecting the cauda equina roots present a special therapeutic problem, and exploratory laminectomy after myelography is recommended for such patients.[21] Attempts have been made to suture lacerated cauda equina roots, but they do not have an adequate sheath to make suturing reliable.[15] Regeneration of anterior spinal roots may occur, but this is much less likely with posterior roots. Nevertheless, even after a delay of many years operations on adherent and partially severed cauda equina roots may sometimes result in useful functional recovery.[23]

While the prognosis is poor in those patients who have a complete spinal cord lesion lasting over 24 hours, in those with partial lesions—and especially with a Brown-Séquard type of syndrome—good functional neurological recovery frequently occurs.[1 3 4 6] In the largest reported series, 66% of 450 patients with stab wounds could eventually walk without help or with minimal aid—a walking stick or a below knee-calliper. Recovery was fair in 17%, and 16 (3·6%) died. There were nine early deaths from meningitis or pulmonary embolism; wound sepsis was rare. In another large series[6] of 217 patients with in-